

The responses of secondary forest tree seedlings to soil enrichment in Peninsular Malaysia : an experimental approach

ABSTRACT

Secondary forests are gaining prominence in tropical landscapes, but in areas adjacent to agricultural land the mix of species found in them is likely to be influenced by high rates of fertilisation and nutrient run-off. We conducted a pot experiment on three secondary forest species, *Glochidion obscurum*, *Lagerstroemia speciosa* and *Vitex pinnata*, to ascertain their response to nutrient addition. We used three treatments, (1) control (no fertilizer addition); (2) addition of 1 g of rock phosphate; and (3) addition of 1 g NPK, and found that *G. obscurum* and *L. speciosa* increased their growth when levels of nitrogen, phosphorus and potassium were increased, indicating evolutionary adaptation to use a high resource strategy. However, *V. pinnata* did not show the same pattern. It is, therefore, possible that on-going fertilization of low-lying secondary forests will produce growing conditions that lead to the reduction of non responsive species such as *V. pinnata* and favour others, such as *G. obscurum* and *L. speciosa*, at least in the early stages of forest succession.

Keyword: *Glochidion obscurum*; *Lagerstroemia speciosa*; Secondary forests; Soil fertilization; *Vitex pinnata*